

REMARKS

This Response and Amendment is in response to the Final Action mailed on November 14, 2003. Claims 1, 17, 18 and 25 have been amended. New claims 35-38 have been added. New independent claim 35 corresponds to previously presented claim 13 rewritten to include all of the limitations of the base claim and any intervening claims. New independent claim 36 corresponds to previously presented claim 14 rewritten to include all of the limitations of the base claim and any intervening claims. Claims 1, 2 and 4-19, 21-24 and 26-38 remain before the Examiner for reconsideration.

In the Office Action, the Examiner rejected claims 1, 4-7, 9 and 17-20, 22-24 and 27-32 under 35 U.S.C. § 102(b) "as being anticipated by Crittendon et al. (6,064,797)."

Specifically, the Examiner asserted:

Crittendon et al. teach a motor 32 ; offset cams 60, comprising twelve offset cams 61-72 on an axis (corresponding to the claimed synchronizing device) and engaging a plurality of pumping elements; a first upstream pumping element 91 (corresponding to the claimed first tube-clamping member); pumping fingers 92-97 (corresponding to the claimed first set of tube squeezing members); a downstream pumping element 100 (corresponding to the claimed second tube-clamping member); pumping fingers 101-102 (corresponding to the claimed second set of tube squeezing members); tubing 20 (corresponding to the claimed flexible tube) having at least one squeezing segment defining two ends (see column 4, lines 49-52); a microprocessor (corresponding to the claimed communication device). Figures 4-6 illustrate the sequential operation of the tube-clamping and tube-squeezing members. Specifically, Figure 6 shows pumping element 100 is adapted to block the tubing 20. Similarly, Figure 4 shows pumping fingers 92-97 and 101-102 are adapted to constrict the tubing 20. Additionally, the figures illustrate four pumping members corresponding to the first set of tube squeezing members, and two pumping fingers corresponding to the second set of tube squeezing members, thus making the first tube squeezing members having an area twice that of the second tube squeezing members. Crittendon et al. teach the claimed method in column 5, line 35-column 6, line 15.

With respect to Applicant's argument set forth in the Response and Amendment After Final Rejection filed February 17, 2004, the Examiner asserted:

Applicant's arguments filed February 17, 2004 have been fully considered but they are not persuasive. The applicant argues that Crittendon et al. reference teaches the sequential operation of the pump such that the pumping fingers fully block or close the tube, and they do not teach that the pumping members are "adapted" to constrict the tube, as required by the claims. The recitation of an element "adapted to be..." means that the element is so structured or dimensioned that it can perform the function for which it is so adapted. As illustrated in Figure 4, the pumping fingers are so structured that they can perform the constricting or blocking function for which they are so "adapted". Thus, Crittendon et al. teach the disclosed invention.

Applicant respectfully traverses the Examiner's rejection.

Initially, Applicant respectfully asserts that Examiner is incorrect that the pumping fingers of Crittendon et al. are "adapted" to constrict. The pumping fingers of Crittendon et al. are adapted only to block and not to constrict. In that regard, to operate any one of the pumping fingers of Crittendon et al. to constrict and not block, one must stop the rotation of camshaft 30 of Crittendon et al., thereby stopping the pump thereof, thereby rendering that pump inoperable to pump liquid. In light of this clear distinction between the present invention and Crittendon et al., Applicant specifically reserves the right to reassert the claims as set forth in the Response and Amendment filed February 17, 2004.

Nonetheless, Applicant has amended independent Claims 1, 18 and 27 to indicate that, in the presently claimed embodiment of the present invention, the first and second tube-clamping members have a range of motion to block the flexible tubing and the first and second tube squeezing members have a range of motion limited to constrict the flexible tubing. Crittendon et al. does not disclose or suggest first and second tube-clamping members having a range of motion to block the flexible tubing and first and

second tube squeezing members have a range of motion limited to constrict the flexible tubing.

Applicant has also amended independent claim 17 to more clearly set forth the method thereof. Crittendon et al. does not disclose or suggest a method including: activating a second tube-clamping member into blocking a lumen of the tube and a first tube-clamping member to open the lumen of the tube; while the second tube-clamping member blocks the lumen, activating a second set of tube squeezing members to constrict a second portion of the tube and a first set of tube squeezing members to allow expansion of a first portion of the tube; activating the first tube-clamping member into blocking the lumen of the tube; while the first tube-clamping member blocks the lumen, activating the second clamping member to open the lumen of the tube, and the second set of tube squeezing members to allow expansion of the second portion of the tube; and while the first tube-clamping member blocks the lumen and the second clamping member is not blocking the lumen and the second set of tube squeezing member are not constricting the lumen activating the first set of tube squeezing members to constrict the first portion of the tube, wherein the first tube-clamping member being upstream from the first set of tube squeezing members, the first set of tube squeezing member being upstream from the second tube-clamping member, the second tube-clamping member being upstream from the second set of tube squeezing members.

To assert anticipation under Section 102(b) the cases hold that the Examiner:

... must show that each element of the claim in issue is found, either expressly described or under principles on inherency, in a single prior art reference, or, that the claimed invention was previously known or embodied in a single prior art device or practice.

Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 771, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. Denied, 465 U.S. 1026 (1984); Tyler Refrigeration v. Kysor Industrial Corp., 777 F.2d 687, 689, 227 USPQ 845, 846-47 (Fed. Cir. 1984) (judgment of anticipation reversed). Under the appropriate analysis, Crittendon et al. does not anticipate the present invention.

The Examiner also rejected Claims 2, 8, 10-12, 21, 26, 33 and 34 under 35 U.S.C. § 103(a) "as being unpatentable over the Crittendon et al. ... in view of Alderson et al. (4,781,548) and Cannon et al. (4,617,014)." Specifically, the Examiner asserted that:

Crittendon et al. teach most of the limitations of the claims, including the blade surface adapted to block the flexible tube. Crittendon et al. do not explicitly teach the details of a disposal flow set. Alderson et al. teach an administration set A including a drip chamber 104, a valve 108, and a cannula 128 (corresponding to the claimed flexible tube); a drop counter (unnumbered, but clearly illustrated in Figure 10 and taught in column 7, lines 5-9); and an air in-line detector (unnumbered, but clearly illustrated in Figure 10). Alderson et al. teach that the administration set A is old and well known in the art for dispensing metered fluid in a simple, yet accurate manner. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the administration set, as taught by Alderson et al. in the Crittendon et al. invention, in order to advantageously provide a simple, and accurate means for dispensing a fluid to a peristaltic pump.

While Crittendon et al., as modified by Alderson et al., teach most of the limitations of the claims, they do not explicitly teach stoppers on each end of the pumping segment nor details of a pressure sensor for the tube. Cannon et al. teach fitments 60, 62 (corresponding to the claimed stoppers) disposed on either end of a pumping tube section 18. Cannon et al. teach that it is desirable to use the fitments to accurately locate the pumping tube section within the peristaltic assembly. Cannon et al. further teach a gauge assembly 44 (corresponding to the claimed sensor unit) adapted for determining the pressure of a liquid flowing through tube 18. The gauge assembly defines a tube receiving space formed by walls 46 engaging at least a portion of the tube (see Figure 6); a block 70 and strain beam 68 (corresponding to the claimed sensing member) projecting in the space for determining deformation-resistance of the tube). Cannon et al. teach that it is desirable to monitor the fluid pressure in the fluid line for the safe operation of an IV administration system. Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to use stoppers and tube pressure sensors, as taught by Cannon et al., in the Crittendon et al., as modified by Alderson et al., invention in order to accurately located the pumping tube section for more efficient pumping, and to monitor fluid pressure in the tube to safely operate an IV system.

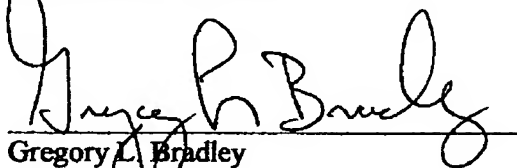
Applicant respectfully traverses the Examiner's rejection.

Applicant respectfully submits that the Alderson et al. and Cannon et al. do not disclose or suggest the limitations of independent claims 1, 17, 18 and 27 that are missing from or not taught by Crittendon et al.. Because the Alderson and Cannon patents do not provide or suggest the missing elements or limitations of independent claims 1, 17, 18 and 27, Applicant submits that the combination of their teachings with that of Crittendon et al. does not provide Applicant's claimed invention. Consequently, Applicant submits that the proposed combination of Crittendon et al, Alderson et al. and Cannon et al. does not render obvious the invention of Claims 1, 17, 18 and 27, and that the rejection based thereon should be withdrawn.

The Examiner further indicated in the Office Action that Claims 13-16 "are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims." As set forth above, Applicants have added new claims 35 and 36 which correspond to previously presented claims 13 and 14, respectively, rewritten in independent form including all of the limitations of the base claim and any intervening claims. New claims 37 and 38, correspond to previously presented claims 15 and 16, respectively. Given the Examiner's indication with respect to previously presented claims 13-16, Applicants respectfully assert that new Claims 35-38 are allowable.

In view of the above amendments and remarks, the applicant respectfully requests that the Examiner withdraw the rejections of the claims, indicate the allowability of the Claims and arrange for an official Notice of Allowance to be issued in due course.

Respectfully submitted,



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